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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/507,083

09/08/2004

Robert Kline

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EXAMINER

NOONAN, WILLOW W

ART UNIT

PAPER NUMBER

2446

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/507,083	Applicant(s) KLINE ET AL.	
	Examiner Willow Noonan	Art Unit 2446	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 October 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,7-9,21-33,35,36 and 38 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,7-9,21-33,35,36 and 38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 September 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The instant application having Application No. 10/507,083 has a total of 20 claims pending in the application; there are 4 independent claims and 16 dependent claims, all of which are ready for examination by the examiner.

Response to Arguments

2. Applicant's arguments with respect to all claims have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 1, 7-9, 21-24, 26-33, and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Kasriel** (U.S. Patent No. 6,721,780) in view of **Desai** (U.S. Patent No. 6,871,218), further in view of **Smith** (U.S. Patent No. 6,742,033), and further in view of **Logue** (U.S. Patent No. 5,935,207).

Regarding claim 1, Kasriel teaches a system for handling data requests from mobile devices, the system comprising a memory operable to store data requests received from at least one device. See Kasriel at col. 4, lines 36-38 ("The pre-download statistics server includes ... a data memory"). Kasriel teaches that the system comprises a state prediction module operable to access the memory and predict, a first

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forecasted data request for a device based on the stored data requests. See Kasriel at col. 2, lines 1-5 ("The web server maintains statistical information responsive to requests for information made by users, to estimate which links between web pages are most likely to be followed."). Kasriel also teaches that the system comprises a push module operable to receive the first forecasted data request from the state prediction module and in response request and receive first response data related to the first forecasted data request and push the first response data for transmission to the device over the network. See Kasriel at col. 1, lines 61-65 ("A web server maintains information regarding which web pages are most likely to be requested by users, and pre-downloads those web pages to associated web clients in advance of actual requests being made by the user.").

However, Kasriel does not teach that the device is a mobile device on a wireless communication network. Desai does teach that the device may be a mobile communication device. See Desai at col. 4, lines 40-50. Further, Kasriel does not teach the push being performed on a periodic basis and independent of receiving a data request from the mobile device. Desai does teach that a push of predictive data may be performed periodically, independent of receiving a data request from the device. See Desai at col. 3, paragraph 2 ("and independently of any subsequent request for a second page of the Web site originating from the remote computer, preemptively carrying out a second sending step to send the remote computer one or more selected second page of the Web site based upon a prediction of a subsequent request by the remote computer, and/or a history of second pages of the Web site previously accessed

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by the remote computer”). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a mobile device in Kasriel’s system because Desai discloses a similar method for predictive and preemptive page caching for improved site navigation.

Modified Kasriel does not teach that the periodic basis at which the first response data is pushed to the mobile device is determined based on a time period during which a user of the mobile device has repeatedly requested the stored data requests. However, Smith does teach that it is well known pre-cache data on a periodic basis according to a time period during which a user of the mobile device has repeatedly requested the stored data requests such that the response data pre-cached prior to an expected new request from the user during this time period. See Smith at col. 7 (“step 200 monitors the user’s activities on an information network such as the information that the user accesses, the time of day during which the user accesses each information, and the duration of each access. Step 202 creates a historical usage pattern for the user based on the user’s activities on the information network. ... [S]teps 220 and 222 determine which information the user is expected to access from the information network and the expected time of day at which the user will request access to the information based upon the user’s historical usage pattern. Step 224 creates a schedule for pre-caching the information that the user is expected to access from the information network within a threshold amount of time from the expected time at which the user will request access to the information”). It would have been obvious to one of ordinary skill to use Smith’s –re-caching technique in Kasriel’s system because Smith teaches that

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the disclosed technique is operable to increase the likelihood that the most recent information is provided to the user in a timely manner. See Smith, *Abstract*.

Modified Kasriel does not teach that the mobile device is configured to transmit a successful prediction notification to the state prediction module indicating that the use has made the stored data request during the time period. However, Logue teaches that it is well known to communicate cache hits from the caching device to a hit accumulator for the purpose of updating statistical information. See Logue at col. 5, lines 11-29 (“Client requests that are serviced from the proxy server's local document cache 465 are communicated to the hit accumulator server 415. As will be described below, the hit accumulator server 415 maintains and organizes the data so as to provide hit tracking information to remote site administrators such as remote site administrator 480.”). It would have been obvious to one of ordinary skill to use Logue's cache hit notifications in modified Kasriel because Logue teaches that the disclosed technique provides more accurate tracking of total hits. See *id.* at col. 2, paragraph 2 (“thereby allowing remote site administrators to accurately track total hits (i.e., those requests serviced from a proxy's local cache and the requests serviced by the remote server)”).

Regarding claim 7, Kasriel teaches that the state prediction module is further operable to select prediction modes according to the Identified subset of stored data. See Kasriel at col. 2, lines 5-11 (“These rules can be responsive to statistical measures, to information about categories of users, to demographic information, to past behavior of specific users at the web site, or to other relevant factors.”).

Regarding claim 8, Kasriel teaches that the prediction modes may comprise: an atomic mode that operates on stored data requests specific to the identity of user (see Kasriel at col. 2, lines 8-11, “responsive to ... specific users”); and a group mode that operates on stored data requests specific to a plurality of users (see Kasriel at col. 2, lines 8-11, “responsive to ... categories of users”). Desai teaches that these users may be mobile communication devices. See Desai at col. 4, lines 40-50.

Regarding claim 9, Kasriel teaches that the state prediction module is operable to predict the first forecasted data request based on a Markov chain model. See Kasriel at col. 5, lines 15-22 (“initial node, a final node, a transition from the initial node [sic] to the final node, and a measure of a weighted probability of transition”).

Regarding claim 38, Smith teaches that the state prediction module is configured to update a prediction algorithm based on whether or not the successful prediction notification is received from the mobile device. See Smith at col. 7 line 65 - col. 8, lines 7 (“Step 234 determines whether the user actually requested access to the pre-cached information from the information network. If the user did not actually request access to the pre-cached information from the information network, the historical usage pattern for the user is updated in step 240 and the schedule for pre-caching the information is adjusted in step 242”). It would have been obvious to use this technique in Kasriel’s system because Smith teaches that the technique may be used to update and improve the schedule for pre-caching. See *id.*

Regarding claims 21 and 25-28, Kasriel teaches a method for use with a communication device by which a user requests data from a server via a network and receives the requested data from the server via the network, the method comprising the following steps: predicting, by the server, what data the user will request, based on historical requests for the data, see Kasriel at col. 2, lines 1-5 (“The web server maintains statistical information responsive to requests for information made by users, to estimate which links between web pages are most likely to be followed.”); storing, by the device, the data until the data is requested by the user; and presenting, by the device, the stored data to the user if and when the user requests the data, see Kasriel at col. 1, lines 61-65 (“A web server maintains information regarding which web pages are most likely to be requested by users, and pre-downloads those web pages to associated web clients in advance of actual requests being made by the user.”).

However, Kasriel does not teach that the device is a mobile device on a wireless communication network. Desai does teach that the device may be a mobile communication device. See Desai at col. 4, lines 40-50. Further, modified Kasriel does not teach the push being performed on a periodic basis and independent of receiving a data request from the mobile device. Desai does teach that a push of predictive data may be performed periodically, independent of receiving a data request from the device. See Desai at col. 3, paragraph 2 (“and independently of any subsequent request for a second page of the Web site originating from the remote computer, preemptively carrying out a second sending step to send the remote computer one or more selected second page of the Web site based upon a prediction of a subsequent request by the

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remote computer, and/or a history of second pages of the Web site previously accessed by the remote computer”). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use Desai’s technique in Kasriel’s system because Desai discloses a similar method for predictive and preemptive page caching for improved site navigation.

Modified Kasriel does not teach that the periodic basis at which the first response data is pushed to the mobile device is determined based on a time period during which a user of the mobile device has repeatedly requested the stored data requests. However, Smith does teach that it is well known pre-cache data on a periodic basis according to a time period during which a user of the mobile device has repeatedly requested the stored data requests such that the response data pre-cached prior to an expected new request from the user during this time period. See Smith at col. 7 (“step 200 monitors the user’s activities on an information network such as the information that the user accesses, the time of day during which the user accesses each information, and the duration of each access. Step 202 creates a historical usage pattern for the user based on the user’s activities on the information network. ... [S]teps 220 and 222 determine which information the user is expected to access from the information network and the expected time of day at which the user will request access to the information based upon the user’s historical usage pattern. Step 224 creates a schedule for pre-caching the information that the user is expected to access from the information network within a threshold amount of time from the expected time at which the user will request access to the information”). It would have been obvious to one of ordinary skill

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to use Smith's –re-caching technique in Kasriel's system because Smith teaches that the disclosed technique is operable to increase the likelihood that the most recent information is provided to the user in a timely manner. See Smith, *Abstract*.

Modified Kasriel does not teach that the mobile device is configured to transmit a successful prediction notification to the state prediction module indicating that the use has made the stored data request during the time period. However, Logue teaches that it is well known to communicate cache hits from the caching device to a hit accumulator for the purpose of updating statistical information. See Logue at col. 5, lines 11-29 (“Client requests that are serviced from the proxy server's local document cache 465 are communicated to the hit accumulator server 415. As will be described below, the hit accumulator server 415 maintains and organizes the data so as to provide hit tracking information to remote site administrators such as remote site administrator 480.”). It would have been obvious to one of ordinary skill to use Logue's cache hit notifications in modified Kasriel because Logue teaches that the disclosed technique provides more accurate tracking of total hits. See *id.* at col. 2, paragraph 2 (“thereby allowing remote site administrators to accurately track total hits (i.e., those requests serviced from a proxy's local cache and the requests serviced by the remote server)”).

Regarding claim 22, Desai teaches, after the presenting step: sending, by the device to the server, an indication of whether the user requested the stored data. See Desai at col. 2, lines 56-65 (“The method may also include maintaining a history of the user requested second documents and sending the history to the second computer”).

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Regarding claim 23, Desai teaches, before the pushing step, assessing the cost effectiveness of pushing the data to the device without having first received a request for the data from the user. See Desai at col. 9, paragraph 2.

Regarding claim 24, Desai teaches, in the storing step, the data is stored along with an indication of when the data should be updated. See Desai at col. 7, paragraph 2 (“Those of skill in this art will recognize that many such mechanisms may be implemented herein. For example, the entries in the cache 220 may be invalidated after a specific time period has elapsed or by a specific date, to insure that the computer 218 does not display stale Web pages to the user from its cache”).

Regarding claims 29 and 32-33, Kasriel teaches a method for use with a communication device by which a user requests data from a server via a network and receives the requested data from the server via the network, the method comprising the following steps: predicting, by the server, what data the user will request, based on historical requests for the data, see Kasriel at col. 2, lines 1-5 (“The web server maintains statistical information responsive to requests for information made by users, to estimate which links between web pages are most likely to be followed.”); storing, by the device, the data until the data is requested by the user; and presenting, by the device, the stored data to the user if and when the user requests the data, see Kasriel at col. 1, lines 61-65 (“A web server maintains information regarding which web pages are most likely to be requested by users, and pre-downloads those web pages to associated web clients in advance of actual requests being made by the user.”).

However, Kasriel does not teach that the device is a mobile device on a wireless communication network. Desai does teach that the device may be a mobile communication device. See Desai at col. 4, lines 40-50. Further, modified Kasriel does not teach the push being performed on a periodic basis and independent of receiving a data request from the mobile device. Desai does teach that a push of predictive data may be performed periodically, independent of receiving a data request from the device. See Desai at col. 3, paragraph 2 (“and independently of any subsequent request for a second page of the Web site originating from the remote computer, preemptively carrying out a second sending step to send the remote computer one or more selected second page of the Web site based upon a prediction of a subsequent request by the remote computer, and/or a history of second pages of the Web site previously accessed by the remote computer”). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use Desai’s technique in Kasriel’s system because Desai discloses a similar method for predictive and preemptive page caching for improved site navigation.

Modified Kasriel does not teach that the periodic basis at which the first response data is pushed to the mobile device is determined based on a time period during which a user of the mobile device has repeatedly requested the stored data requests. However, Smith does teach that it is well known pre-cache data on a periodic basis according to a time period during which a user of the mobile device has repeatedly requested the stored data requests such that the response data pre-cached prior to an expected new request from the user during this time period. See Smith at col. 7 (“step

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200 monitors the user's activities on an information network such as the information that the user accesses, the time of day during which the user accesses each information, and the duration of each access. Step 202 creates a historical usage pattern for the user based on the user's activities on the information network. ... [S]teps 220 and 222 determine which information the user is expected to access from the information network and the expected time of day at which the user will request access to the information based upon the user's historical usage pattern. Step 224 creates a schedule for pre-caching the information that the user is expected to access from the information network within a threshold amount of time from the expected time at which the user will request access to the information"). It would have been obvious to one of ordinary skill to use Smith's –re-caching technique in Kasriel's system because Smith teaches that the disclosed technique is operable to increase the likelihood that the most recent information is provided to the user in a timely manner. See Smith, *Abstract*.

Modified Kasriel does not teach that the mobile device is configured to transmit a successful prediction notification to the state prediction module indicating that the use has made the stored data request during the time period. However, Logue teaches that it is well known to communicate cache hits from the caching device to a hit accumulator for the purpose of updating statistical information. See Logue at col. 5, lines 11-29 ("Client requests that are serviced from the proxy server's local document cache 465 are communicated to the hit accumulator server 415. As will be described below, the hit accumulator server 415 maintains and organizes the data so as to provide hit tracking information to remote site administrators such as remote site administrator 480."). It

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would have been obvious to one of ordinary skill to use Logue's cache hit notifications in modified Kasriel because Logue teaches that the disclosed technique provides more accurate tracking of total hits. See *id.* at col. 2, paragraph 2 ("thereby allowing remote site administrators to accurately track total hits (i.e., those requests serviced from a proxy's local cache and the requests serviced by the remote server)").

Regarding claim 30, Desai teaches updating the probabilities based on the user's browsing history. See Desai at col. 10, line 60-col. 11, line 7 ("the history may be updated, optionally by adding or subtracting members from the list of previously accessed pages of the history and/or by changing the weighting coefficients associated with the constituent members of the history").

Regarding claim 31, Desai teaches that the predicting step takes into account the cost effectiveness of pushing the data in determining which data to send in the sending step. See Desai at col. 9, paragraph 2.

Regarding claim 35, Kasriel teaches that the state prediction module is operable to predict the first forecasted data request based on a Markov chain model. See Kasriel at col. 5, lines 15-22 ("initial node, a final node, a transition from the initial node [sic] to the final node, and a measure of a weighted probability of transition").

5. Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable for the reasons set forth above, further in view of **Codella** (U.S. Patent No. 7,003,566).

Regarding claim 36, Codella teaches limiting the predicted state to a maximum depth. See Codella at p. 15, lines 38-47 ("the 'depth' of the prediction can be

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configurable"). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use this feature with Kasriel's and Desai's systems because Codella teaches a similar system for predictive data caching. See Codella, *Abstract*.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Willow Noonan whose telephone number is (571)270-1322. The examiner can normally be reached on Monday through Friday, 7:30 AM-5:00 PM EST.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey Pwu can be reached on (571) 272-6798. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/W. N./
Examiner, Art Unit 2446

/Jeffrey Pwu/
Supervisory Patent Examiner, Art Unit 2446